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SEQUENCE LISTING

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PRICKETT, KATHRYN S.

<120> INOTROPIC AND DIURETIC EFFECTS OF GLP-1 AND GLP-1 AGONISTS

<130> 256-152DIV US

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<160> 75

<170> PatentIn Ver. 2.1

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<213> Heloderma horridum

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Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
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Ser Gly Ala Pro Pro Pro Ser
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Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30

Ser Gly Ala Pro Pro Pro Ser
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<213> Homo sapiens

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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
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<222> (36)..(38)

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<223> provided no more than three of Xaa3, Xaa5, Xaa6, Xaa8,
Xaa10, Xaa11, Xaa12, Xaa13, Xaa14, Xaa15, Xaa16, Xaa17,
Xaa19, Xaa20, Xaa21, Xaa24, Xaa25, Xaa26, Xaa27 or Xaa28
are Ala; and the compound is not exendin-3 or exendin-4

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<223> this peptide may encompass 28-39 residues, wherein
residues 1-28 are constant and residues 29-39 may vary
in length according to the specification

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Xaa Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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Page 9

GLP-1 agonist

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 Ser Gly Ala Pro Pro
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GLP-1 agonist

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 20 25 30

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Ser

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20 25 30

Ser Gly Ala Xaa Xaa Xaa

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 20 25 30
 Ser Gly Ala Xaa Xaa Xaa
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 Ser Gly Ala Pro Pro
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 Ser Gly Ala Xaa Xaa
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 Ser Gly Ala Xaa Xaa
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<220>
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 GLP-1 agonist

<220>
 <221> MOD_RES
 <222> (31)
 <223> hPro

<220>
 <221> MOD_RES
 <222> (36)
 <223> hPro

<220>
 <223> C-term amidated

<400> 52
 His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1 5 10 15
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
 20 25 30
 Ser Gly Ala Xaa
 35

<210> 53
 <211> 35
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Exendin or
 GLP-1 agonist

<220>
 <223> C-term amidated

<400> 53
 Arg Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1 5 10 15
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
 20 25 30
 Ser Gly Ala
 35

<210> 54
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Exendin or
 GLP-1 agonist

<220>

<223> C-term amidated

<400> 54

His Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly
 20 25 30

<210> 55

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin or GLP-1 agonist

<220>

<221> MOD_RES

<222> (6)

<223> Naphthylala

<220>

<223> C-term amidated

<400> 55

His Gly Glu Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
 20 25

<210> 56

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin or GLP-1 agonist

<220>

<223> C-term amidated

<400> 56

His Gly Glu Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Met Glu Glu
 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
 20 25

<210> 57

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin or GLP-1 agonist

<220>

<223> C-term amidated

<400> 57

His Gly Glu Gly Thr Phe Ser Thr Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
20 25

<210> 58

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin or GLP-1 agonist

<220>

<223> C-term amidated

<400> 58

His Gly Glu Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Met Ala Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
20 25

<210> 59

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Exendin or GLP-1 agonist

<220>

<221> MOD_RES

<222> (10)

<223> pentylgly

<220>

<223> C-term amidated

<400> 59

His Gly Glu Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
20 25

<210> 60

<211> 28

<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Exendin or GLP-1 agonist

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<220>  
<221> MOD_RES  
<222> (22)  
<223> Naphthylala
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<220>
<223> C-term amidated

<400> 60
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Xaa Ile Glu Phe Leu Lys Asn
20 25

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<210> 61
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Exendin or
      GLP-1 agonist
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<220>  
<221> MOD_RES  
<222> (23)  
<223> tButylqlly
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<220>
<223> C-term amidated

<400> 61
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Xaa Glu Trp Leu Lys Asn
20 25

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<210> 62
<211> 28
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Exendin or GLP-1 agonist

<220>
<223> C-term amidated

<400> 62
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Asp Phe Leu Lys Asn
Page 24

<210> 63
 <211> 33
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Exendin or
 GLP-1 agonist

<220>
 <223> C-term amidated

<400> 63
 His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu
 1 5 10 15
 Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
 20 25 30

Ser

<210> 64
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Exendin or
 GLP-1 agonist

<220>
 <223> C-term amidated

<400> 64
 His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu
 1 5 10 15
 Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly
 20 25

<210> 65
 <211> 37
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Exendin or
 GLP-1 agonist

<220>
 <221> MOD_RES
 <222> (31)
 <223> hPro

<220>
 <221> MOD_RES
 <222> (36)..(37)

<223> hPro

<220>

<223> C-term amidated

<400> 65

His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
20 25 30

Ser Gly Ala Xaa Xaa
35

<210> 66

<211> 29

<212> PRT

<213> artificial sequence

<220>

<223> Agonist of GLP-1

<220>

<221> MOD_RES

<222> (1)..(1)

<223> Ala is modified with an R group which can be 4-imidazopropionyl
(des-amino-histidyl), 4-imidazoacetyl, or 4-imidazo-a,
adimethyl-acetyl

<220>

<221> MOD_RES

<222> (19)..(19)

<223> Xaa is a Lys or Arg

<220>

<221> misc_feature

<222> (19)..(19)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> MOD_RES

<222> (27)..(27)

<223> Lys is modified with an R group consisting of C6 -C10 unbranched
acyl, or is absent

<220>

<221> MOD_RES

<222> (29)..(29)

<223> Arg is modified with an R group consisting of Gly-OH or NH2

<400> 66

Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
1 5 10 15

Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25

<210> 67
 <211> 19
 <212> PRT
 <213> artifical sequence

<220>
 <221> MOD_RES
 <222> (1)..(1)
 <223> Ser is modified by H2N, H2N-Ser, H2N-Val-Ser, H2N-Asp-Val-Ser. or
 any one of SEQ ID NO:68 to 74

<220>
 <221> MOD_RES
 <222> (17)..(17)
 <223> Xaa is a Lys or Arg

<220>
 <221> misc_feature
 <222> (17)..(17)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> MOD_RES
 <222> (19)..(19)
 <223> Arg can be modified by the group consisting of NH2, OH, Gly-NH2,
 or Gly-OH

<400> 67

Ser Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val
 1 5 10 15

Xaa Gly Arg

<210> 68
 <211> 4
 <212> PRT
 <213> artificial sequence

<220>
 <223> variable sequence insert for artificial GLP-1 analog

<400> 68

Ser Asp Val Ser
 1

<210> 69
 <211> 5
 <212> PRT
 <213> artificial sequence

<220>
 <223> variable sequence insert for artificial GLP-1 analog

<400> 69

Thr Ser Asp Val Ser

1

5

<210> 70
 <211> 6
 <212> PRT
 <213> artificial sequence

<220>
 <223> variable sequence insert for artificial GLP-1 analog
 <400> 70

Phe Thr Ser Asp Val Ser
 1 5

<210> 71
 <211> 7
 <212> PRT
 <213> artificial sequence

<220>
 <223> variable sequence insert for artificial GLP-1 analog
 <400> 71

Thr Phe Thr Ser Asp Val Ser
 1 5

<210> 72
 <211> 8
 <212> PRT
 <213> artificial sequence

<220>
 <223> variable sequence insert for artificial GLP-1 analog
 <400> 72

Gly Thr Phe Thr Ser Asp Val Ser
 1 5

<210> 73
 <211> 9
 <212> PRT
 <213> artificial sequence

<220>
 <223> variable sequence insert for artificial GLP-1 analog
 <400> 73

Glu Gly Thr Phe Thr Ser Asp Val Ser
 1 5

<210> 74
 <211> 10
 <212> PRT
 <213> artificial sequence

<220>
 <223> variable sequence insert for artificial GLP-1 analog
 <400> 74

Ala Glu Gly Thr Phe Thr Ser Asp Val Ser
 1 5 10

<210> 75
 <211> 29
 <212> PRT
 <213> artificial sequence

<220>
 <223> artificial

<220>
 <221> MOD_RES
 <222> (1)..(1)
 <223> neutral amino acid or D or N-acylated or alkylated form of histidine can be substituted for His

<220>
 <221> MOD_RES
 <222> (2)..(2)
 <223> small neutral amino acid can be substituted for Ala

<220>
 <221> MOD_RES
 <222> (3)..(3)
 <223> acidic or neutral amino acid can be substituted for Glu

<220>
 <221> MOD_RES
 <222> (4)..(4)
 <223> neutral amino acid can be substituted for Gly

<220>
 <221> MOD_RES
 <222> (9)..(9)
 <223> acidic amino acid can be substituted for Asp

<220>
 <221> MOD_RES
 <222> (10)..(10)
 <223> Tyr can be substituted for Val

<220>
 <221> MOD_RES
 <222> (12)..(12)
 <223> Lys can be substituted for Ser

<220>
 <221> MOD_RES
 <222> (15)..(15)
 <223> Asp can be substituted for Glu

<220>
 <221> MOD_RES
 <222> (16)..(16)

<223> Ser can be substituted for Gly

<220>

<221> MOD_RES

<222> (17)..(17)

<223> Arg can be substituted for Gln

<220>

<221> MOD_RES

<222> (18)..(18)

<223> Arg can be substituted for Ala

<220>

<221> MOD_RES

<222> (20)..(20)

<223> Lys can be substituted for a neutral amino acid, arg, or a D form of lys

<220>

<221> MOD_RES

<222> (20)..(20)

<223> Gln can be substituted for Lys

<220>

<221> MOD_RES

<222> (25)..(25)

<223> Trp can be substituted for an oxidation-resistant amino acid

<220>

<221> MOD_RES

<222> (28)..(28)

<223> Lys can be substituted for a neutral amino acid, arg, or a D form of lys

<220>

<221> MOD_RES

<222> (29)..(29)

<223> Xaa is a Gly, Gly-Arg, Gly-Arg-Gly, or absent

<220>

<221> misc_feature

<222> (29)..(29)

<223> Xaa can be any naturally occurring amino acid

<400> 75

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Xaa
20 25